

HCV Genome and Recombinant Proteins

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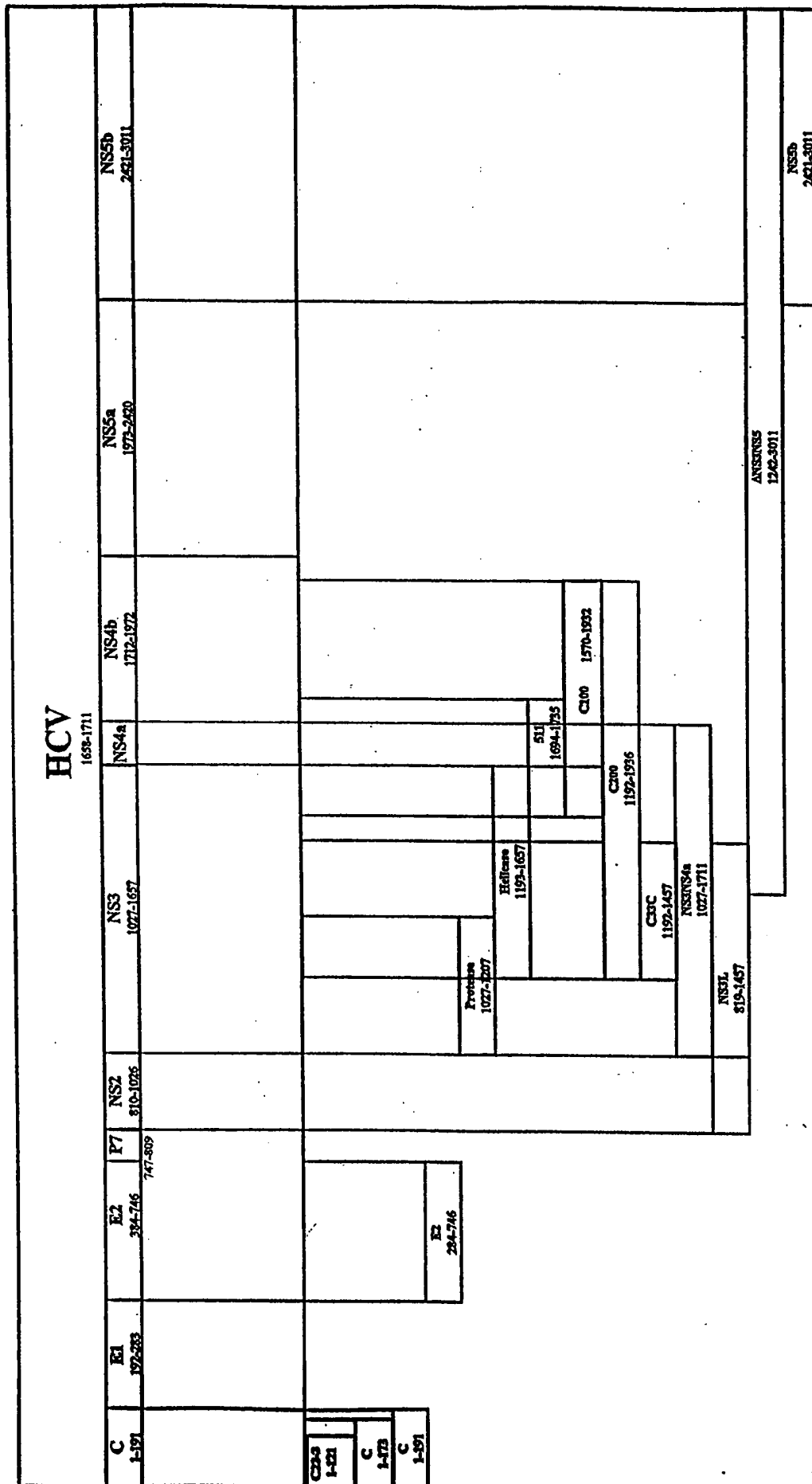


FIG. 1

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      1                                     10
      M   A   P   I   T   A   Y   A   Q   Q
      ATG GCG CCC ATC ACG GCG TAC GCC CAG CAG

      20
      T   R   G   L   L   G   C   I   I   T   S   L   T   G   R
      ACA AGG GGC CTC CTA GGG TGC ATA ATC ACC AGC CTA ACT GGC CGG

      30                                     40
      D   K   N   Q   V   E   G   E   V   Q   I   V   S   T   A
      GAC AAA AAC CAA GTG GAG GGT GAG GTC CAG ATT GTG TCA ACT GCT

      50
      A   Q   T   F   L   A   T   C   I   N   G   V   C   W   T
      GCC CAA ACC TTC CTG GCA ACG TGC ATC AAT GGG GTG TGC TGG ACT

      60                                     70
      V   Y   H   G   A   G   T   R   T   I   A   S   P   K   G
      GTC TAC CAC GGG GCC GGA ACG AGG ACC ATC GCG TCA CCC AAG GGT

      80
      P   V   I   Q   M   Y   T   N   V   D   Q   D   L   V   G
      CCT GTC ATC CAG ATG TAT ACC AAT GTA GAC CAA GAC CTT GTG GGC

      90                                     100
      W   P   A   P   Q   G   S   R   S   L   T   P   C   T   C
      TGG CCC GCT CCG CAA GGT AGC CGA TCA TTG ACA CCC TGC ACT TGC

      110
      G   S   S   D   L   Y   L   V   T   R   H   A   D   V   I
      GGC TCC TCG GAC CTT TAC CTG GTC ACG AGG CAC GCC GAT GTC ATT

      120                                     130
      P   V   R   R   R   G   D   S   R   G   S   L   L   S   P
      CCC GTG CGC CGG CGG GGT GAT AGC AGG GGC AGC CTG CTG TCG CCC

      140
      R   P   I   S   Y   L   K   G   S   S   G   G   P   L   L
      CGG CCC ATT TCC TAC TTG AAA GGC TCC TCG GGG GGT CCG CTG TTG

      150                                     160
      C   P   A   G   H   A   V   G   I   F   R   A   A   V   C
      TGC CCC GCG GGG CAC GCC GTG GGC ATA TTT AGG GCC GCG GTG TGC

      170
      T   R   G   V   A   K   A   V   D   F   I   P   V   E   N
      ACC CGT GGA GTG GCT AAG GCG GTG GAC TTT ATC CCT GTG GAG AAC

      180
      L   E   T   T   M   R   S
      CTA GAG ACA ACC ATG AGG TCC

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FIG. 2

210 220
 G D F D S V I D C N T C V T Q
 GGC GAC TTC GAC TCG GTG ATA GAC TGC AAT ACG TGT GTC ACC CAG

230
 T V D F S L D P T T I E T I
 ACA GTC GAT TTC AGC CTT GAC CCT ACC TTC ACC ATT GAG ACA ATC

240 250
 T L P Q D A V S R T Q R R G R
 ACG CTC CCC CAA GAT GCT GTC TCC CGC ACT CAA CGT CGG GGC AGG

260
 T G R G K P G I Y R F V A P G
 ACT GGC AGG GGG AAG CCA GGC ATC TAC AGA TTT GTG GCA CCG GGG

270 280
 E R P S G M F D S S V L C E C
 GAG CGC CCC TCC GGC ATG TTC GAC TCG TCC GTC CTC TGT GAG TGC

290
 Y D A G C A W Y E L T P A E T
 TAT GAC GCA GGC TGT GCT TGG TAT GAG CTC ACG CCC GCC GAG ACT

300 310
 T V R L R A Y M N T P G L P V
 ACA GTT AGG CTA CGA GCG TAC ATG AAC ACC CCG GGG CTT CCC GTG

320
 C Q D H L E F W E G V F T G L
 TGC CAG GAC CAT CTT GAA TTT TGG GAG GGC GTC TTT ACA GGC CTC

330 340
 T H I D A H F L S Q T K Q S G
 ACT CAT ATA GAT GCC CAC TTT CTA TCC CAG ACA AAG CAG AGT GGG

350
 E N L P Y L V A Y Q A T V C A
 GAG AAC CTT CCT TAC CTG GTA GCG TAC CAA GCC ACC GTG TGC GCT

360 370
 R A Q A P P S W D Q M W K C
 AGG GCT CAA GCC CCT CCC CCA TCG TGG GAC CAG ATG TGG AAG TGT

380
 L I R L K P T L H G P T P L L
 TTG ATT CGC CTC AAG CCC ACC CTC CAT GGG CCA ACA CCC CTG CTA

390 400
 Y R L G A V Q N E I T L T H P
 TAC AGA CTG GGC GCT GTT CAG AAT GAA ATC ACC CTG ACG CAC CCA

410
 V T K Y I M T C M S A D L E V
 GTC ACC AAA TAC ATC ATG ACA TGC ATG TCG GCC GAC CTG GAG GTC

FIG. 3B

420 430
 V T S T W V L V G G V L A A L
 GTC ACG AGC ACC TGG GTG CTC GTT GGC GGC GTC CTG GCT GCT TTG

440
 A A Y C L S T G C V I V G R
 GCC GCG TAT TGC CTG TCA ACA GGC TGC GTG GTC ATA GTG GGC AGG

450 460
 V V L S G K P A I I P D R E V
 GTC GTC TTG TCC GGG AAG CCG GCA ATC ATA CCT GAC AGG GAA GTC

470
 L Y R E F D E M E E C S Q H L
 CTC TAC CGA GAG TTC GAT GAG ATG GAA GAG TGC TCT CAG CAC TTA

480 490
 P Y I E Q G M M L A E Q F K Q
 CCG TAC ATC GAG CAA GGG ATG ATG CTC GCC GAG CAG TTC AAG CAG

500
 K A L G L L Q T A S R Q A E V
 AAG GCC CTC GGC CTC CTG CAG ACC GCG TCC CGT CAG GCA GAG GTT

510 520
 I A P A V Q T N W Q K L E T F
 ATC GCC CCT GCT GTC CAG ACC AAC TGG CAA AAA CTC GAG ACC TTC

530
 W A K H M W N F I S G I Q Y L
 TGG GCG AAG CAT ATG TGG AAC TTC ATC AGT GGG ATA CAA TAC TTG

540 550
 A G L S T L P G N P A I A S L
 GCG GGC TTG TCA ACG CTG CCT GGT AAC CCC GCC ATT GCT TCA TTG

560
 M A F T A A V T S P L T T S Q
 ATG GCT TTT ACA GCT GCT GTC ACC AGC CCA CTA ACC ACT AGC CAA

570 580
 T L L F N I L G G W V A A Q L
 ACC CTC CTC TTC AAC ATA TTG GGG GGG TGG GTG GCT GCC CAG CTC

590
 A A P G A A T A F V G A G L A
 GCC GCC CCC GGT GCC GCT ACT GCC TTT GTG GGC GCT GGC TTA GCT

600 610
 G A A I G S V G L G K V L I D
 GGC GCC GCC ATC GGC AGT GTT GGA CTG GGG AAG GTC CTC ATA GAC

620
 I L A G Y G A G V A G A L V A
 ATC CTT GCA GGG TAT GGC GCG GGC GTG GCG GGA GCT CTT GTG GCA

FIG. 3C

630 640
 F K I M S G E V P S T E D L V
 TTC AAG ATC ATG AGC GGT GAG GTC CCC TCC ACG GAG GAC CTG GTC

650
 N L L P A I L S P G A L V V G
 AAT CTA CTG CCC GCC ATC CTC TCG CCC GGA GCC CTC GTA GTC GGC

660 670
 V V C A A I L R R H V G P G E
 GTG GTC TGT GCA GCA ATA CTG CGC CGG CAC GTT GGC CCG GGC GAG

680
 G A V Q W M N R L I A F A S R
 GGG GCA GTG CAG TGG ATG AAC CGG CTG ATA GCC TTC GCC TCC CGG

690 700
 G N H V S P T H Y V P E S D A
 GGG AAC CAT GTT TCC CCC ACG CAC TAC GTG CCG GAG AGC GAT GCA

710
 A A R V T A I L S S L T V T Q
 GCT GCC CGC GTC ACT GCC ATA CTC AGC AGC CTC ACT GTA ACC CAG

720 730
 L L R R L H Q W I S S E C T T
 CTC CTG AGG CGA CTG CAC CAG TGG ATA AGC TCG GAG TGT ACC ACT

740
 P C S G S W L R D I W D W I C
 CCA TGC TCC GGT TCC TGG CTA AGG GAC ATC TGG GAC TGG ATA TGC

750 760
 E V L S D F K T W L K A K L M
 GAG GTG TTG AGC GAC TTT AAG ACC TGG CTA AAA GCT AAG CTC ATG

770
 P Q L P G I P F V S C Q R G Y
 CCA CAG CTG CCT GGG ATC CCC TTT GTG TCC TGC CAG CGC GGG TAT

780 790
 K G V W R G D G I M H T R C H
 AAG GGG GTC TGG CGA GGG GAC GGC ATC ATG CAC ACT CGC TGC CAC

800
 C G A E I T G H V K N G T M R
 TGT GGA GCT GAG ATC ACT GGA CAT GTC AAA AAC GGG ACG ATG AGG

810 820
 I V G P R T C R N M W S G T F
 ATC GTC GGT CCT AGG ACC TGC AGG AAC ATG TGG AGT GGG ACC TTC

830
 P I N A Y T T G P C T P L P A
 CCC ATT AAT GCC TAC ACC ACG GGC CCC TGT ACC CCC CTT CCT GCG

FIG. 3D

840 850
 P N Y T F A L W R V S A E E Y
 CCG AAC TAC ACG TTC GCG CTA TGG AGG GTG TCT GCA GAG GAA TAC

860
 V E I R Q V G D F H Y V T G M
 GTG GAG ATA AGG CAG GTG GGG GAC TTC CAC TAC GTG ACG GGT ATG

870 880
 T T D N L K C P C Q V P S P E
 ACT ACT GAC AAT CTT AAA TGC CCG TGC CAG GTC CCA TCG CCC GAA

890
 F F T E L D G V R L H R F A P
 TTT TTC ACA GAA TTG GAC GGG GTG CGC CTA CAT AGG TTT GCG CCC

900 910
 P C K P L L R E E V S F R V G
 CCC TGC AAG CCC TTG CTG CGG GAG GAG GTA TCA TTC AGA GTA GGA

920
 L H E Y P V G S Q L P C E P E
 CTC CAC GAA TAC CCG GTA GGG TCG CAA TTA CCT TGC GAG CCC GAA

930 940
 P D V A V L T S M L T D P S H
 CCG GAC GTG GCC GTG TTG ACG TCC ATG CTC ACT GAT CCC TCC CAT

950
 I T A E A A G R R L A R G S P
 ATA ACA GCA GAG GCG GCC GGG CGA AGG TTG GCG AGG GGA TCA CCC

960 970
 P S V A S S S A S Q L S A P S
 CCC TCT GTG GCC AGC TCC TCG GCT AGC CAG CTA TCC GCT CCA TCT

980
 L K A T C T A N H D S P D A E
 CTC AAG GCA ACT TGC ACC GCT AAC CAT GAC TCC CCT GAT GCT GAG

990 1000
 L I E A N L L W R Q E M G G N
 CTC ATA GAG GCC AAC CTC CTA TGG AGG CAG GAG ATG GGC GGC AAC

1010
 I T R V E S E N K V V I L D S
 ATC ACC AGG GTT GAG TCA GAA AAC AAA GTG GTG ATT CTG GAC TCC

1020 1030
 F D P L V A E E D E R E I S V
 TTC GAT CCG CTT GTG GCG GAG GAG GAC GAG CGG GAG ATC TCC GTA

1040
 P A E I L R K S R R F A Q A L
 CCC GCA GAA ATC CTG CGG AAG TCT CGG AGA TTC GCC CAG GCC CTG

FIG. 3E

1050
 P V W A R P D Y N P P L V E T
 CCC GTT TGG GCG CGG CCG GAC TAT AAC CCC CCG CTA GTG GAG ACG

1070
 W K K P D Y E P P V V H G C P
 TGG AAA AAG CCC GAC TAC GAA CCA CCT GTG GTC CAT GGC TGC CCG

1080
 L P P P K S P P V P P P R K K
 CTT CCA CCT CCA AAG TCC CCT CCT GTG CCT CCG CCT CGG AAG AAG

1100
 R T V V L T E S T L S T A L A
 CGG ACG GTG GTC CTC ACT GAA TCA ACC CTA TCT ACT GCC TTG GCC

1110
 E L A T R S F G S S S T S G I
 GAG CTC GCC ACC AGA AGC TTT GGC AGC TCC TCA ACT TCC GGC ATT

1130
 T G D N T T T S S E P A P S G
 ACG GGC GAC AAT ACG ACA ACA TCC TCT GAG CCC GCC CCT TCT GGC

1140
 C P P D S D A E S Y S S M P P
 TGC CCC CCC GAC TCC GAC GCT GAG TCC TAT TCC TCC ATG CCC CCC

1160
 L E G E P G D P D L S D G S W
 CTG GAG GGG GAG CCT GGG GAT CCG GAT CTT AGC GAC GGG TCA TGG

1170
 S T V S S E A N A E D V V C C
 TCA ACG GTC AGT AGT GAG GCC AAC GCG GAG GAT GTC GTG TGC TGC

1190
 S M S Y S W T G A L V T P C A
 TCA ATG TCT TAC TCT TGG ACA GGC GCA CTC GTC ACC CCG TGC GCC

1200
 A E E Q K L P I N A L S N S L
 GCG GAA GAA CAG AAA CTG CCC ATC AAT GCA CTA AGC AAC TCG TTG

1220
 L R H H N L V Y S T T S R S A
 CTA CGT CAC CAC AAT TTG GTG TAT TCC ACC ACC TCA CGC AGT GCT

1230
 C Q R Q K K V T F D R L Q V L
 TGC CAA AGG CAG AAG AAA GTC ACA TTT GAC AGA CTG CAA GTT CTG

1250
 D S H Y Q D V L K E V K A A A
 GAC AGC CAT TAC CAG GAC GTA CTC AAG GAG GTT AAA GCA GCG GCG

FIG. 3F

1260 1270
 S K V K A N L L S V E E A C S
 TCA AAA GTG AAG GCT AAC TTG CTA TCC GTA GAG GAA GCT TGC AGC

1280
 L T P P H S A K S K F G Y G A
 CTG ACG CCC CCA CAC TCA GCC AAA TCC AAG TTT GGT TAT GGG GCA

1290 1300
 K D V R C H A R K A V T H I N
 AAA GAC GTC CGT TGC CAT GCC AGA AAG GCC GTA ACC CAC ATC AAC

1310
 S V W K D L L E D N V T P I D
 TCC GTG TGG AAA GAC CTT CTG GAA GAC AAT GTA ACA CCA ATA GAC

1320 1330
 T T I M A K N E V F C V Q P E
 ACT ACC ATC ATG GCT AAG AAC GAG GTT TTC TGC GTT CAG CCT GAG

1340
 K G G R K P A R L I V F P D L
 AAG GGG GGT CGT AAG CCA GCT CGT CTC ATC GTG TTC CCC GAT CTG

1350 1360
 G V R V C E K M A L Y D V V T
 GGC GTG CGC GTG TGC GAA AAG ATG GCT TTG TAC GAC GTG GTT ACA

1370
 K L P L A V M G S S Y G F Q Y
 AAG CTC CCC TTG GCC GTG ATG GGA AGC TCC TAC GGA TTC CAA TAC

1380 1390
 S P G Q R V E F L V Q A W K S
 TCA CCA GGA CAG CGG GTT GAA TTC CTC GTG CAA GCG TGG AAG TCC

1400
 K K T P M G F S Y D T R C F D
 AAG AAA ACC CCA ATG GGG TTC TCG TAT GAT ACC CGC TGC TTT GAC

1410 1420
 S T V T E S D I R T E E A I Y
 TCC ACA GTC ACT GAG AGC GAC ATC CGT ACG GAG GAG GCA ATC TAC

1430
 Q C C D L D P Q A R V A I K S
 CAA TGT TGT GAC CTC GAC CCC CAA GCC CGC GTG GCC ATC AAG TCC

1440 1450
 L T E R L Y V G G P L T N S R
 CTC ACC GAG AGG CTT TAT GTT GGG GGC CCT CTT ACC AAT TCA AGG

1460
 G E N C G Y R R C R A S G V L
 GGG GAG AAC TGC GGC TAT CGC AGG TGC CGC GCG AGC GGC GTA CTG

FIG. 3G

1470 1480
 T T S C G N T L T C Y I K A R
 ACA ACT AGC TGT GGT AAC ACC CTC ACT TGC TAC ATC AAG GCC CGG

1490
 A A C R A A G L Q D C T M L V
 GCA GCC TGT CGA GCC GCA GGG CTC CAG GAC TGC ACC ATG CTC GTG

1500 1510
 C G D D L V V I C E S A G V Q
 TGT GGC GAC GAC TTA GTC GTT ATC TGT GAA AGC GCG GGG GTC CAG

1520
 E D A A S L R A F T E A M T R
 GAG GAC GCG GCG AGC CTG AGA GCC TTC ACG GAG GCT ATG ACC AGG

1530 1540
 Y S A P P G D P P Q P E Y D L
 TAC TCC GCC CCC CCT GGG GAC CCC CCA CAA CCA GAA TAC GAC TTG

1550
 E L I T S C S S N V S V A H D
 GAG CTC ATA ACA TCA TGC TCC TCC AAC GTG TCA GTC GCC CAC GAC

1560 1570
 G A G K R V Y Y L T R D P T T
 GGC GCT GGA AAG AGG GTC TAC TAC CTC ACC CGT GAC CCT ACA ACC

1580
 P L A R A A W E T A R H T P V
 CCC CTC GCG AGA GCT GCG TGG GAG ACA GCA AGA CAC ACT CCA GTC

1590 1600
 N S W L G N I I M F A P T L W
 AAT TCC TGG CTA GGC AAC ATA ATC ATG TTT GCC CCC ACA CTG TGG

1610
 A R M I L M T H F F S V L I A
 GCG AGG ATG ATA CTG ATG ACC CAT TTC TTT AGC GTC CTT ATA GCC

1620 1630
 R D Q L E Q A L D C E I Y G A
 AGG GAC CAG CTT GAA CAG GCC CTC GAT TGC GAG ATC TAC GGG GCC

1640
 C Y S I E P L D L P P I I Q R
 TGC TAC TCC ATA GAA CCA CTG GAT CTA CCT CCA ATC ATT CAA AGA

1650 1660
 L H G L S A F S L H S Y S P G
 CTC CAT GGC CTC AGC GCA TTT TCA CTC CAC AGT TAC TCT CCA GGT

1670
 E I N R V A A C L R K L G V P
 GAA ATC AAT AGG GTG GCC GCA TGC CTC AGA AAA CTT GGG GTA CCG

FIG. 3H

1680 1690
 P L R A W R H R A R S V R A R
 CCC TTG CGA GCT TGG AGA CAC CGG GCC CGG AGC GTC CGC GCT AGG

1700
 L L A R G G R A A I C G K Y L
 CTT CTG GCC AGA GGA GGC AGG GCT GCC ATA TGT GGC AAG TAC CTC

1710 1720
 F N W A V R T K L K L T P I A
 TTC AAC TGG GCA GTA AGA ACA AAG CTC AAA CTC ACT CCA ATA GCG

1730
 A A G Q L D L S G W F T A G Y
 GCC GCT GGC CAG CTG GAC TTG TCC GGC TGG TTC ACG GCT GGC TAC

1740 1750
 S G G D I Y H S V S H A R P R
 AGC GGG GGA GAC ATT TAT CAC AGC GTG TCT CAT GCC CGG CCC CGC

1760
 W I W F C L L L L A A G V G I
 TGG ATC TGG TTT TGC CTA CTC CTG CTT GCT GCA GGG GTA GGC ATC

1770 1780
 Y L L P N R M S T N P K P Q R
 TAC CTC CTC CCC AAC CGA ATG AGC ACG AAT CCT AAA CCT CAA AGA

1790
 K T K R N T N R R P Q D V K F
 AAG ACC AAA CGT AAC ACC AAC CGG CGG CCG CAG GAC GTC AAG TTC

1800 1810
 P G G G Q I V G G V Y L L P R
 CCG GGT GGC GGT CAG ATC GTT GGT GGA GTT TAC TTG TTG CCG CGC

1820
 R G P R L G V R A T R K T S E
 AGG GGC CCT AGA TTG GGT GTG CGC GCG ACG AGA AAG ACT TCC GAG

1830 1840
 R S Q P R G R R Q P I P K A R
 CGG TCG CAA CCT CGA GGT AGA CGT CAG CCT ATC CCC AAG GCT CGT

1850
 R P E G R T W A Q P G Y P W P
 CGG CCC GAG GGC AGG ACC TGG GCT CAG CCC GGG TAC CCT TGG CCC

1860 1870
 L Y G N E G C G W A G W L L S
 CTC TAT GGC AAT GAG GGC TGC GGG TGG GCG GGA TGG CTC CTG TCT

1880
 P R G S R P S W G P T D P R R
 CCC CGT GGC TCT CGG CCT AGC TGG GGC CCC ACA GAC CCC CGG CGT

FIG 3I

1890 1892
R S R N L G K OC
AGG TCG CGC AAT TTG GGT AAG TAA

FIG. 3J